



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

April 22, 2021

Tonya Brown
Product Registration
Regulatory Affairs
BASF Corporation
P.O. Box 13528, 26 Davis Drive
Research Triangle Park, NC 27709

Subject: Registration Review Label Mitigation for Kresoxim-methyl
Product Name: Sovran Fungicide
EPA Registration Number: 7969-154
Application Dates: 10/25/2018
Decision Numbers: 568456

Dear Ms. Brown:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Kresoxim-methyl Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

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EPA Reg. No. 7969-154
Decision No. 568456

If you have any questions about this letter, please contact Quinn Gavin by phone at 703-347-0325, or via email at gavin.quinn@epa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Linda Arrington', with a stylized flourish at the end.

Linda Arrington, Branch Chief
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

Enclosure



We create chemistry

Kresoxim-methyl Group 11 Fungicide

ACCEPTED
Apr 22, 2021
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 7969-154

Sovran fungicide

For use on apple, cucurbit vegetables, grape, pear and other pome fruit, and pecan

Active Ingredient:

kresoxim-methyl: (methyl (E)-2-methoxyimino-2-[2-(o-tolyloxymethyl)phenyl]acetate) 50.0%

Other Ingredients: 50.0%

Total: 100.0%

EPA Reg No. 7969-154

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See the attached booklet for complete First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

FIRST AID

If on skin or clothing	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15 to 20 minutes.• Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none">• Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes.• Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes.• Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• DO NOT induce vomiting unless told to do so by a poison control center or doctor.• DO NOT give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth to mouth, if possible.• Call a poison control center or doctor for further treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed, inhaled, or absorbed through skin. Causes eye irritation. **DO NOT** get on skin, in eyes, or on clothing. Avoid breathing vapor or spray mist.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Protective eyewear (goggles, face shield or safety glasses)
- Long-sleeved shirt and long pants
- Chemical resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride ≥ 14 mils, or viton ≥ 14 mils
- Shoes plus socks

User Safety Requirements

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls Statement

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This pesticide is toxic to freshwater and estuarine fish and invertebrates. **DO NOT** apply directly to water, areas where surface water is present, or intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

Surface Water Advisory. This chemical can contaminate surface water through spray drift. Under some conditions, it may also have a high potential for runoff into surface water (via both dissolution in runoff water and adsorption to eroding soil) for several days post application. These conditions include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and highly erodible soils cultivated using poor agricultural practices such as conventional tillage and down-the-slope plowing, and areas where an intense or sustained rainfall is forecast to occur within 48 hours.

Groundwater Advisory. This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in alkaline areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **12 hours**.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Protective eyewear (goggles, face shield or safety glasses)
- Coveralls
- Chemical resistant gloves made of barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, natural rubber \geq 14 mils, polyethylene, polyvinyl chloride \geq 14 mils, or viton \geq 14 mils
- Shoes plus socks

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

Pesticide Storage

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label.

Pesticide Disposal

Wastes resulting from using this product may be disposed of on-site or at an approved waste disposal facility. If these wastes cannot be disposed of according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake

(capacity \leq 50 pounds) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake

(capacity $>$ 50 pounds) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

In Case of Spill

In case of large-scale spill of this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Steps to be taken in case material is released or spilled:

- Wear the personal protective equipment (PPE) specified on the label.
- Recover the material for reuse according to label directions whenever possible. Sweep and/or shovel the spilled material into an appropriate closed container. Avoid the creation of dusty conditions.
- Remove and wash clothing and personal protective equipment before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

This package contains **Sovran® fungicide**, a 50% water-dispersible granule (WG). The active ingredient in **Sovran**, kresoxim-methyl, belongs to the strobilurin class of fungicides. Strobilurins are synthetic analogs of a natural antifungal substance and belong to the group of respiration inhibitors classified by the EPA as Quinone Outside Inhibitors (QoI) or target-site-of-action **Group 11** fungicides. **Sovran** is effective against pathogens resistant to other fungicides of different modes of action.

Sovran inhibits spore germination, sporulation, and mycelial growth on the leaf surface. Optimum disease control is achieved when **Sovran** is applied in a regularly scheduled protective spray program and is used in a rotation program with other fungicides of different modes of action.

- **Apple - Sovran** controls scab, powdery mildew, frog-eye leaf spot/black rot, flyspeck, sooty blotch, white rot, Brooks fruit spot and Alternaria blotch. When **Sovran** is applied to control scab and powdery mildew, suppression of cedar apple rust and quince rust also occurs.
- **Cucurbit Vegetables - Sovran** controls powdery mildew and gummy stem blight. Because of its high specific activity, low vapor pressure, and good rainfastness, **Sovran** has good residual activity against target fungi.
- **Grape - Sovran** controls powdery mildew, black rot, Phomopsis cane and leaf spot, and downy mildew. **Sovran**, when applied to control these grape diseases, also suppresses Botrytis bunch rot.
- **Pear and other Pome Fruit - Sovran** controls scab and powdery mildew. When **Sovran** is applied to control scab and powdery mildew, suppression of quince rust also occurs.
- **Pecan - Sovran** controls leaf and nut scab.

DO NOT apply in the following counties in New York: Nassau and Suffolk.

Sensitive Crop Precaution

Sovran may cause injury to certain sensitive cherry varieties including Van, Sweetheart, Chelan, Somerset, Valera, Vandalay, Cavalier, Coral, Coral Champagne, Angela, Vista, Emperor Francis, Lapins, Royalton, Schmidt, Summit, Viva and Asian pears of variety Olympic (Korean Giant). Use special care when applying **Sovran** to prevent contact with these sensitive varieties and other nontarget plants. Avoid off-target movement. Consult a BASF representative or local agricultural authorities for more information concerning additional cherry varieties that may be sensitive to **Sovran**.

Thoroughly rinse spray equipment, including the inside of the tank, hoses, and nozzles after and before using the same equipment in crops that are sensitive to **Sovran**.

Resistance Management

For resistance management, **Sovran** contains a **Group 11** fungicide. Any fungal population may contain individuals naturally resistant to **Sovran** and other **Group 11** fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Appropriate resistance management strategies must be followed.

Kresoxim-methyl, the active ingredient of **Sovran**, belongs to the group of respiration inhibitors classified as Quinone Outside Inhibitors (QoI) or target-site-of-action **Group 11** fungicides. The repeated and exclusive use of **Sovran** and other **Group 11** strobilurin (QoI) fungicides may allow less sensitive strains of target fungi to build over time and may reduce disease control. Target fungi exhibiting resistance to other **Group 11** strobilurin (QoI) fungicides may also exhibit resistance to **Sovran**. To maintain the performance of **Sovran** and other **Group 11** strobilurin (QoI) fungicides in the field, the use of this product should conform to resistance management strategies stated for each crop in **Crop-specific Information**.

To delay the development of fungicide resistance:

1. **Rotate** the use of **Sovran** or other **Group 11** fungicides within a growing season sequence with different target-site-of-action groups that control the same pathogens.
2. **Tank Mixtures** - Use tank mixtures with fungicides from different target-site-of-action groups that are equally effective on the target pest when such use is permitted. Use at least the minimum labeled rates of each fungicide in the tank mix. Follow the most restrictive directions for use of any tank mix partners. **DO NOT** tank mix with any product which contains a prohibition on tank mixing.

3. **Integrated Pest Management (IPM)** - Integrate **Sovran® fungicide** into an overall disease and pest management program that includes scouting, uses historical information related to pesticide use and crop rotation, and which considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices. Follow cultural practices known to reduce disease development. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. **Sovran** may be used in Agricultural Extension advisory (disease forecasting) programs, which base application timing on environmental factors favorable for disease development.
4. **Monitoring** - Monitor efficacy of all fungicides used in the disease management program against the targeted pathogen and record other factors that may influence fungicide performance and/or disease development. Monitor treated fungal populations for resistance development.
5. **Reporting** - If a **Group 11** target site fungicide, including **Sovran**, appears to be less effective against a pathogen that it previously controlled or suppressed, contact a BASF representative, local extension specialist, or certified crop advisor for further investigation.

Cleaning Spray Equipment

Spraying equipment must be cleaned thoroughly before and after applying this product, particularly if a product with the potential to injure crops was used before **Sovran**.

Application Instructions

Apply specified rates of **Sovran** as instructed in **Crop-specific Information**. Ground application is advised for thorough coverage. Aerial application can be made for those crops or in conditions where applications are not possible using ground equipment.

Ground Application

Apply **Sovran** in sufficient water to ensure thorough coverage of foliage, bloom, or fruit. Thorough coverage is required for optimum disease control. Under low-level disease conditions, use the minimum application rates. Maximum application rates and shortened application intervals are advised for severe or threatening disease conditions.

DO NOT apply when conditions favor drift from target area or when windspeed is greater than 10 mph. Check equipment frequently for calibration.

Aerial Application

Aerial application can be made and thorough coverage is required to obtain optimum disease control. Avoid applications under conditions when uniform coverage cannot be obtained or when spray drift may occur. Use no less than 5 gallons of spray solution per acre.

Follow manufacturer recommendations when setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

Restrictions

- Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].
- Not registered for aerial application in California.

Spray Drift Advisories

The applicator is responsible for avoiding off-site spray drift. Be aware of nearby non-target sites and environmental conditions.

DO NOT apply when conditions favor drift beyond area intended for application.

Conditions that may contribute to spray drift include spray droplet size, spray nozzle/pressure combinations, wind speed and direction, temperature/humidity, thermal inversion, etc. Consult your state extension agent for spray drift prevention guidelines in your area. All aerial and ground application equipment must be properly maintained and calibrated according to manufacturer specifications.

Importance of Droplet Size

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions (see **Wind; Temperature and Humidity and Temperature Inversions** sections).

Controlling Droplet Size - Ground Boom

- **Volume** - Use the highest practical spray volume for the application. Increasing the spray volume so that larger droplets are produced will reduce spray drift. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** - Use the lowest manufacturer recommended spray pressure for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** - Use nozzles designed to reduce spray drift. Ensure that the spray nozzle is designed for the intended application.

Controlling Droplet Size - Aircraft

- **Adjust Nozzles** - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

Boom Height - Ground - For ground equipment, the boom should remain level with the crop and have minimal bounce.

Release Height - Aircraft - For aerial application, higher release heights increase the potential for spray drift.

Shielded Sprayers - Consider using shielded sprayers. Shielding the boom or individual nozzles can reduce spray drift. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

Wind

AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Drift potential generally increases with wind speed.

Applicators need to be familiar with local wind patterns and terrain that could affect spray.

Temperature and Humidity

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

Temperature Inversions

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

Additives

Additives or adjuvants are usually not necessary for effective use of **Sovran® fungicide**. If the pH of the tank mix is 9 or greater, BASF advises the addition of a buffer or acidifier to optimize performance of **Sovran**.

Refer to **Tank Mixing Information**. Consult a BASF representative or local authorities for more information about additives.

Tank Mixing Information

If tank mixtures are used, it is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Tank Mix Partners/Components

Sovran can be tank mixed with most fungicides, insecticides, plant growth regulators, adjuvants or additives. However, all varieties and cultivars have not been tested with possible tank mix combinations. Local conditions can also influence crop response and may not match those under which BASF has conducted testing. Physical incompatibility, reduced disease control, or crop injury may result from mixing **Sovran** with other products. Therefore, before using any tank mix (fungicides, insecticides, plant growth regulators, adjuvants, or additives), test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

Mixing Order

1. **Water** - Begin by filling a thoroughly clean sprayer tank 3/4 full of clean water.
2. **Agitation** - Maintain constant agitation throughout mixing and application.
3. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
4. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5. **Water-dispersible products** (including **Sovran**, dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products**
7. **Emulsifiable concentrates** (including oil concentrate when applicable)
8. **Water-soluble additives** [including ammonium sulfate (AMS) or urea ammonium nitrate (UAN) when applicable]
9. **Remaining quantity of water**

Make sure each component is thoroughly mixed and suspended. Maintain constant agitation during application.

Restrictions and Limitations

- **DO NOT** apply in the following counties in New York: Nassau and Suffolk.
- **Maximum annual use rates** - See **Table 1. Sovran® fungicide Restrictions and Limitations Overview.**
- **Preharvest intervals (PHI)** - See **Table 1. Sovran® fungicide Restrictions and Limitations Overview.**
- **Restricted-entry interval (REI)** - **12 hours.**
- **DO NOT** apply less than the specified **Sovran** labeled rates.
- **DO NOT** apply through any type of irrigation system.
- **DO NOT** apply by air in California.

Table 1. Sovran® fungicide Restrictions and Limitations Overview

Crop	Minimum Time from Application to Harvest (PHI) (days)	Maximum Product Rate per Application (ozs/A)	Maximum Number of Applications per Year at Maximum Rate	Maximum Product Rate per Year (ozs/A)
Pome Fruit Apple Pear Quince Crabapple Loquat Mayhaw Oriental pear	30	6.4	3	19.2
Cucurbit Vegetables Group¹ Cantaloupe Cucumber Melon Squash Pumpkin Watermelon	0	4.8	4	19.2
Grape	14	6.4	3	19.2
Pecan	45	4.8	3	14.4

¹ For a complete list of crops, see **Crop-specific Information.**

Crop-specific Information

Apple*

Table 2. Sovran® fungicide Application Rates and Timing on Apple

Target Disease	Directions For Use	Product Application Rate ¹ (ozs/A)
Apple scab (<i>Venturia inaequalis</i>)	Begin at 1/2-inch green or when conditions are conducive for disease development. Repeat at 7-day to 10-day intervals depending on the Sovran use rate, rate of shoot growth, level of disease pressure and the curative properties of the fungicide applied after Sovran . A 7-day interval is advised if Sovran is applied at 3.2 ozs/A, shoots are growing rapidly, disease pressure is high, or a fungicide with protectant activity only is applied following Sovran .	3.2 to 6.4
Apple powdery mildew (<i>Podosphaera leucotricha</i>) Frogeye leaf spot (<i>Botryosphaeria obtusa</i>)	Begin at 1/2-inch green. Repeat at 7-day to 10-day intervals depending on the rate of shoot growth and level of disease pressure. A 7-day interval is advised if shoots are growing rapidly or disease pressure is high.	4.0 to 6.4
Alternaria blotch (<i>Alternaria mali</i>) Brooks fruit spot (<i>Mycosphaerella pomii</i>) Flayspeck (<i>Zygothiala jamaicensis</i>) Sooty blotch (disease complex) White rot (Bot rot) (<i>Botryosphaeria dothidea</i>) Black rot (<i>Botryosphaeria obtusa</i>)	Apply Sovran at first or second cover. Repeat at 7-day to 14-day intervals.	4.0 to 6.4
Suppression Only Cedar-apple rust (<i>Gymnosporangium juniperivirginianae</i>) Quince rust (<i>Gymnosporangium clavipes</i>)	Applications of Sovran for the control of scab or powdery mildew will also suppress cedar-apple and quince rust.	3.2 to 6.4

* See separate crop table for crabapple use rates and application directions.

¹The rates per acre are based on a tree size requiring a standard dilute spray of 300 gallons per acre.

Application Information

Make applications of **Sovran® fungicide** in sufficient spray volume to ensure thorough coverage. The rate of **Sovran** is dependent on numerous factors, including varietal susceptibility, weather conditions and disease pressure. Refer to **Table 2. Sovran® fungicide Application Rates and Timing on Apple** for specific instructions for disease control, application timings, and rates. Optimum disease control is achieved when **Sovran** is applied in a regularly scheduled protective spray program with other fungicides of different modes of action. When **Sovran** is applied curatively against scab, applications of **Sovran** must be made as soon as possible (within 96 hours) following the beginning of a scab infection period, and at the highest label rate. Subsequent applications should be made within 7 to 10 days as described in **Table 2. Sovran® fungicide Application Rates and Timing on Apple**. A reliable disease-forecasting system must be used to accurately predict and record scab infection periods.

Sovran, applied for the control of scab and powdery mildew, will also suppress cedar-apple rust and quince rust. Under conditions of high disease pressure, rotation of **Sovran** with other fungicides effective against rust is advised. During periods of heavy infection pressure, use the higher rates of **Sovran** shown in **Table 2. Sovran® fungicide Application Rates and Timing on Apple**.

Crop-specific Restrictions and Limitations

- **DO NOT** apply by air in California.

Resistance Management

To limit the potential for development of resistance:

- **DO NOT** make more than 3 applications of **Sovran** or other strobilurin (QoI) fungicides per year.
- **DO NOT** make more than 2 sequential applications of **Sovran**.
- Apply **Sovran** in alternation with labeled non-strobilurin (non-QoI, or **non-Group 11**) fungicides with a different mode of action.

Cucurbit Vegetables Group

Table 3. Sovran® fungicide Application Rates and Timing on Cucurbit Vegetables

Crop	Target Disease	Directions For Use	Product Application Rate (ozs/A)
Cucurbit Vegetables Group Chayote Chinese waxgourd Citron melon Cucumber Gherkin Pumpkin Watermelon	Powdery mildew <i>(Sphaerotheca fuliginea, Erysiphe cichoracearum)</i>	Begin applications of Sovran before onset of disease development and continue on a 7-day to 10-day interval. Use the higher rate and the shorter interval when disease pressure is high.	3.2 to 4.8
Edible gourd Chinese okra Cucuzza Hechima Hyotan Momordica spp. Balsam apple Balsam pear Bitter melon Chinese cucumber Muskmelon Cantaloupe Casaba Crenshaw melon Golden pershaw melon Honey balls Honeydew melon Mango melon Persian melon Pineapple melon Santa Claus melon Snake melon Summer squash Crookneck squash Scallop squash Straightneck squash Vegetable marrow Zucchini Winter squash Acorn squash Butternut squash Calabaza Hubbard squash Spaghetti squash	Gummy stem blight <i>(Didymella bryoniae)</i>	Begin applications of Sovran before onset of disease development and continue on a 7-day to 10-day interval.	4.8

Application Information

Sovran® fungicide provides optimum disease control when applied in a regularly scheduled protective fungicide program and used in a spray program that rotates fungicides with different modes of action.

Sovran may be applied by ground sprayer or aerial equipment at the rates listed in **Table 3. Sovran® fungicide Application Rates and Timing on Cucurbit Vegetables.**

Begin applications of **Sovran** before onset of disease development and continue on a 7-day to 10-day interval. Use the higher rate and the shorter interval when disease pressure is high.

Use with Adjuvants and Other Products

The use of additives or adjuvants may improve the performance of **Sovran**. However, BASF evaluations also indicate that under some conditions (particularly high temperatures and/or high additive rates), application of **Sovran** in combination with certain rates of silicone-based or oil-containing (petroleum or crop) additives or adjuvants can cause injury to some cucurbit crops.

BASF has not tested all varieties and cultivars with all possible tank mix combinations and rates of additives or adjuvants. Local environmental conditions also influence crop tolerance and may not match those under which BASF has conducted testing. Physical incompatibility, reduced disease control, or crop injury may result from mixing **Sovran** with other products.

To minimize the likelihood of crop injury, BASF recommends testing **Sovran** in combination with other products for crop safety on a small portion of the crop. However, environmental variability precludes direct and consistent projection of small area test results to future use.

Consult a BASF representative for more information concerning additives or adjuvants.

Crop-specific Restrictions and Limitations

- **Sovran** is not for use in greenhouse or transplant production systems for food crops including cucurbits.
- **DO NOT** apply by air in California.

Crop Rotation Restriction

- Cucurbit vegetables listed on the **Sovran** label may be planted immediately following the last application. All other crops can be planted 14 days after the last application.

Resistance Management

To limit the potential for development of resistance:

- On cucurbit vegetables, **DO NOT** make more than 4 applications of **Sovran** or other strobilurin (QoI, or **Group 11**) fungicides per year.
- **DO NOT** make more than 1 application of **Sovran** before alternating to a labeled non-strobilurin (non-QoI, or **non-Group 11**) fungicide with a different mode of action for at least one application.
- To maintain the performance of **Sovran** in the field, **DO NOT** make sequential applications of **Sovran** or exceed the total number of applications of **Sovran** per year stated in this label. Adhere to the label instructions regarding the consecutive applications of **Sovran** or other target-site-of-action **Group 11** fungicides that have a similar site of action on the same pathogens.

Fungal isolates of the gummy stem blight and powdery mildew pathogens listed in this label that are resistant to **Group 11** fungicides, including pyraclostrobin, azoxystrobin, trifloxystrobin, and kresoxim-methyl, may dominate the fungal population if **Group 11** fungicides were used predominantly and repeatedly in the same field in successive years as the primary method of control for the targeted pathogen species. This may result in reduced disease control by **Sovran** or other **Group 11** fungicides.

NOTE: Isolates of gummy stem blight and powdery mildew with reduced sensitivity to **Group 11** fungicides have been detected in various locations. Disease control from **Sovran** or other **Group 11** fungicides may be less than satisfactory where these isolates are predominant.

DO NOT use **Sovran** for control of these diseases where resistance to **Group 11** fungicides exists.

Grape

Table 4. Sovran® fungicide Application Rates and Timing on Grape

Target Disease	Directions For Use	Product Application Rate (ozs/A)
Grape powdery mildew (<i>Uncinula necator</i>)	Begin at bud break and continue applications on a 14-day interval. Under low disease pressure, the interval may be extended up to 21 days.	3.2 to 4.8
Grape black rot (<i>Guignardia bidwellii</i>) Phomopsis cane and leaf spot (<i>Phomopsis viticola</i>)	Begin at bud break and continue on a 14-day interval.	3.2 to 4.8
Downy mildew (<i>Plasmopara viticola</i>)	Begin at bud break and continue on a 7-day to 10-day interval.	4.0 to 6.4
Suppression Only Botrytis bunch rot (<i>Botrytis cinerea</i>)	Applications of Sovran , made between early bloom and veraison for the control of powdery mildew, downy mildew, black rot or Phomopsis, will also suppress Botrytis bunch rot.	3.2 to 6.4

Application Information

Use **Sovran** as a protective spray as described in **Table 4. Sovran® fungicide Application Rates and Timing on Grape**.

For grape varieties more susceptible to powdery mildew or under conditions that favor rapid powdery mildew development, use the higher rate of **Sovran** per acre.

When powdery mildew pressure is low, the spray interval can be extended up to 21 days. BASF advises that a reliable risk assessment model (for example, the Gubler-Thomas model) be used to assist in determining the spray interval. Consult your local agriculture extension agent or BASF representative for more information.

For downy mildew control, begin sprays at bud break and continue on a 7-day to 10-day schedule. Under conditions that favor severe downy mildew development, use 6.4 ounces of **Sovran** per acre.

Sovran applied between early bloom and veraison for control of the previously mentioned grape diseases will also provide suppression of Botrytis bunch rot. Under conditions of high disease pressure, effective Botryticides are recommended for control of Botrytis bunch rot.

Make applications of **Sovran** in sufficient spray volume to ensure thorough coverage.

The use of organosilicone-based adjuvants in a tank mix with **Sovran** may result in marginal burn of the youngest leaves of certain sensitive varieties.

Crop-specific Restrictions and Limitations

- **DO NOT** use less than 10 gallons of water per acre.
- **DO NOT** apply by air in California.

Resistance Management

To limit the potential for development of resistance:

- On wine and table grapes, **DO NOT** make more than 3 applications of **Sovran** or other strobilurin (Qol or **Group 11**) fungicides per year. On grapes for other uses, **DO NOT** make more than 3 applications per year.
- **DO NOT** make more than 2 sequential applications of **Sovran**.
- Apply **Sovran** in alternation with labeled non-strobilurin (non-Qol, or **non-Group 11**) fungicides with different modes of action.

Pear, Quince, Crabapple, Loquat, Mayhaw, and Oriental Pear

Table 5. Sovran® fungicide Application Rates and Timing on Pear, Quince, Crabapple, Loquat, Mayhaw, and Oriental Pear

Target Disease	Directions For Use	Product Application Rate ¹ (ozs/A)
Scab (<i>Venturia inaequalis</i> , <i>Venturia pyrina</i>)	Begin at 1/2-inch green or when conditions are conducive for disease development. Repeat at 7-day to 10-day intervals depending on the Sovran use rate, rate of shoot growth, level of disease pressure and the curative properties of the fungicide applied after Sovran . A 7-day interval is advised if Sovran is applied at 3.2 ozs/A, shoots are growing rapidly, disease pressure is high, or a fungicide with protectant activity only is applied following Sovran .	3.2 to 6.4
Powdery mildew (<i>Podosphaera leucotricha</i>)	Begin at 1/2-inch green and repeat at 7-day to 10-day intervals depending on the rate of shoot growth and level of disease pressure. A 7-day interval is recommended if shoots are growing rapidly or disease pressure is high.	4.0 to 6.4
Suppression Only Quince rust (<i>Gymnosporangium clavipes</i>)	Applications of Sovran for the control of scab or powdery mildew will also suppress quince rust.	3.2 to 6.4

¹ The rates per acre are based on a tree size requiring a standard dilute spray of 300 gallons per acre.

Application Information

Make applications of **Sovran** in sufficient spray volume to ensure thorough coverage. Apply **Sovran** at the rates and intervals described in **Table 5. Sovran® fungicide Application Rates and Timing on Pear, Quince, Crabapple, Loquat, Mayhaw, and Oriental Pear**. For concentrate sprays, use the equivalent rate per acre as determined for dilute spray. **Sovran** applied for the control of scab and powdery mildew will also suppress quince rust. Under conditions of high disease pressure, rotate **Sovran** with other fungicides effective against rust. Use the higher rate of **Sovran** when heavy infection pressure exists or is anticipated.

Crop-specific Restrictions and Limitations

- **DO NOT** apply by air in California.

Resistance Management

To limit the potential for development or resistance:

- **DO NOT** make more than 3 applications of **Sovran** or other strobilurin (QoI, or **Group 11**) fungicides per year.
- **DO NOT** make more than 2 sequential applications of **Sovran**.
- Apply **Sovran** in alternation with labeled non-strobilurin (non-QoI, or **non-Group 11**) fungicides with a different mode of action.

Pecan

Table 6. Sovran® fungicide Application Rates and Timing on Pecan

Target Disease	Directions For Use	Product Application Rate (ozs/A)
Scab (<i>Cladosporium caryigenum</i>)	Prepollination: Begin at bud break and continue on a 14-day interval through the end of pollination.	2.4 to 3.2
Scab (<i>Cladosporium caryigenum</i>)	Postpollination: Apply on a 21-day interval until shell hardening.	3.2 to 4.8

Application Information

The best scab control will be achieved by using **Sovran** on a protective spray schedule. Depending on spray timing and infection pressure, apply 2.4 to 4.8 ounces of **Sovran** as described in **Table 6. Sovran® fungicide Application Rates and Timing on Pecan**. To ensure good coverage, BASF advises using a minimum of 50 gallons of water per acre.

Crop-specific Restrictions and Limitations

- **DO NOT** apply by air in California.

Resistance Management

To limit the potential for development of resistance:

- **DO NOT** make more than 3 applications of **Sovran** or other strobilurin (QoI) fungicides per year.
- **DO NOT** make more than 3 sequential applications of **Sovran**.
- Apply **Sovran** in alternation with labeled non-strobilurin (non-QoI, or **non-Group 11**) fungicides with different modes of action.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

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